WHAT IS CLAIMED IS:

1. A method for arc straightening in an HID lamp, comprising the steps of:

determining and selecting a frequency signal or a frequency sweep signal that produces arc straightening for an HID lamp; and

exciting an arc straightening acoustic mode in conjunction with a carrier frequency signal.

2. The method as defined in claim 1, further comprising the step of choosing the carrier frequency signal sufficiently high so that in conjunction with the frequency signal or the frequency sweep signal the arc is stable.

3. The method as defined in claim 1, wherein the exciting step comprises amplitude modulating the carrier frequency signal with either the frequency signal or the frequency sweep signal which corresponds to the power frequencies for arc straightening.

4. The method as defined in claim 3, further comprising the step of controlling the amount of arc straightening by controlling an amplitude of the amplitude modulating frequency signal or an amplitude of the modulating frequency sweep signal.

5. The method as defined in claim 1, wherein the exciting step comprises summing the carrier frequency signal with a second frequency signal or second frequency sweep signal to obtain a difference power frequency or power frequencies which excite an arc straightening acoustic mode.

6. The method as defined in claim 5, further comprising the step of controlling an amount of arc straightening by controlling an amplitude of the second frequency signal or the second frequency sweep signal relative to the amplitude of the carrier frequency signal.

7. The method as defined in claim 1, wherein the exciting step comprises the step of alternating in time continuously the carrier frequency signal and either a frequency signal or a frequency sweep signal where the frequency signal or frequency sweep signal is equal to one half the power frequency required for producing arc straightening for an HID lamp.

8. The method as defined in claim 7, further comprising the step of controlling an amount of arc straightening by controlling a duration of the frequency signal or the frequency sweep signal relative to a duration of the carrier frequency signal.

9. The method as defined in claim 1, wherein the determining step comprises:

determining a resonance spectrum for the HID lamp;

if a window is present in the resonance spectrum that is above the first azimuthal acoustic mode for the HID lamp and below the first radial acoustic mode for the HID lamp, then selecting a frequency signal that produces arc straightening from within the window; and

if the window is not present, then selecting a frequency range for the frequency sweep signal that produces arc straightening that is above the first azimuthal acoustic mode for the HID lamp and below the first radial acoustic mode for the HID lamp.

10. The method as defined in claim 1, wherein the HID lamp has a cylindrical symmetry.

11. The method as defined in claim 1, wherein the HID lamp has a discharge vessel with a ceramic envelope.

12. The method as defined in claim 1, wherein the step of selecting a frequency for producing arc straightening comprises selecting a frequency between a first azimuthal acoustic mode and a first radial acoustic mode in

the resonance spectrum for the HID lamp which not only produces arc straightening but also excites the second longitudinal acoustic mode in order to obtain color mixing.

13. An HID lamp with arc straightening, comprising:

a discharge vessel containing an ionizable filling; and

a circuit for exciting an arc straightening acoustic mode in conjunction with a carrier frequency in the discharge vessel.

14. The HID lamp as defined in claim 13, wherein the discharge vessel has a cylindrical symmetry.

15. The HID lamp as defined in claim 13, wherein the discharge vessel has a ceramic envelope.

16. The HID lamp as defined in claim 13, wherein the circuit for exciting the discharge vessel amplitude modulates the carrier frequency signal with either a frequency signal or a frequency sweep signal.

17. The HID lamp as defined in claim 13, wherein the circuit for exciting the discharge vessel includes a component for summing the carrier frequency signal with a second frequency signal or a frequency sweep signal to obtain a difference power frequency signal which excites the arc straightening acoustic mode.

18. The HID lamp as defined in claim 13, wherein the circuit for exciting the discharge vessel alternates in time continuously the carrier frequency signal and either a frequency signal or a frequency sweep signal where the frequency signal or frequency sweep signal is equal to one half the power frequency required for producing arc straightening for the HID lamp.

19. The HID lamp as defined in claim 13, wherein the circuit for exciting an arc straightening acoustic mode in conjunction with a carrier frequency in the

discharge vessel uses a frequency between a first azimuthal acoustic mode and a first radial acoustic mode in the resonance spectrum for the HID lamp which also excites the second longitudinal acoustic mode in order to obtain color mixing.